

of his published papers (twenty-four in number), special attention being called to a paper on Melanism in the 'Entomologist' for 1887; and a list of works of reference in the Central Public Library, Hull. The volume concludes with a complete Alphabetical Index of Species.

We have only one fault to find with the execution of this excellent little book. Too much prominence is given to the term "European" collection, for, as we are told on p. x, "The collection . . . consists of a magnificent series of specimens obtained from almost every district of the entire Palaearctic Region from Iceland to Vladivostock."

## PROCEEDINGS OF LEARNED SOCIETIES.

### GEOLOGICAL SOCIETY.

November 3rd, 1909.—Prof. W. J. Sollas, LL.D., Sc.D., F.R.S.,  
President, in the Chair.

The following communications were read:—

1. 'Certain Jurassic (Lias-Oolite) Strata of South Dorset, and their Correlation.' By S. S. Buckman, F.G.S.

(1) Descriptions are given of certain strata (Lower Bathonian to Pliensbachian) on the Dorset coast:—Chideock and Burton Bradstock.

(2) Comparison is made with similar strata inland—with a summary of beds at Stoke Knap; with certain North Dorset strata; with Toarcian beds of Yorkshire and Northamptonshire.

(3) The strata described are classified according to what may be called the 'multizonal' or 'polyhemeral' system in the main, according to the scheme introduced for these strata in 1893 (5); but further divisions due to other investigators and to the Author are dealt with.

(4) The strata described are arranged among thirty-six zonal (hemeral) divisions—a greater number of divisions than Oppel used in 1856 for all the Jurassic rocks, of which these beds form but a small part.

(5) The Upper Lias part of the Junction-Bed of Down Cliffs, Chideock (Lower or pre-*striatulus* Toarcian) is a very condensed, imperfect epitome in 20 inches of about 80 feet of strata on the Yorkshire coast, and of very much more, allowing for gaps.

(6) Between the *bifrons*-layer and the *striatulus*-layer of the Junction-Bed there is occasionally a 2-inch layer which is all that represents some 250 feet of deposit in the Cotteswolds—so that about 2 feet of Junction-Bed was formed while some 550 feet were being deposited elsewhere.

(7) The Upper Toarcian (*moorei-dumortierie* hemeræ) makes a great showing at Burton Bradstock and Down Cliffs as the Down Cliffs Clay and Bridport Sands (*pars*)—the greatest thickness of rocks of these dates in the country.

(8) The sequence of *aalensis*-strata above *moorei*-beds is demonstrated at Chideock Quarry Hill, in the upper part of the Bridport Sands.

(9) The Inferior Oolite (Aalenian, Bajocian, Bathonian *pars*) strata of Burton and Chideock are not counterparts of one another: they supplement each other to a certain extent; both are incomplete, and much epitomized representatives of thicker deposits elsewhere.

(10) Mr. Thompson's zonal scheme for the Upper Lias is considered, and a table of Upper Lias zones for future work is presented.

2. 'Certain Jurassic ("Inferior Oolite") Ammonites and Brachiopoda.' By S. S. Buckman, F.G.S.

This paper is presented as a palæontological appendix, partly to the Author's accompanying communication, partly to his previous stratigraphical work. In a short introduction the Author, remarking on the fecundity of the 'Inferior Oolite' in the matter of species, makes the suggestion that this is due to the relatively great length of time taken up in its deposition; and he adduces data for supposing that the time thus occupied was from one-fifth to one-fourth of that for the whole Jurassic System.

The paper describes certain species of Ammonites and Brachiopoda which are important for the identification, the correlation, or the dating of Inferior Oolite deposits, and certain other notable species which, having frequently attracted attention in the field, require naming in the interest of future workers.

3. 'The Cretaceous and Eocene Strata of Egypt.' By William Fraser Hume, D.Sc., A.R.S.M., F.G.S., Superintendent, Geological Survey of Egypt.

The Author divides the fossiliferous Cretaceous strata into three series:—

1. A northern Antonian type, marked by Cenomanian species, including typical Turonian strata.

2. A central Egyptian or Hammama type, Cenomanian strata being absent, Campanian marked by abundance of *Ostrea villei* and *Trigonarca multidentata*, and phosphatic beds; the Danian portion having an eastern facies in which *Pecten*-marls are a characteristic feature, and a western chalky limestone indicating a close affinity with the white chalk of Northern Europe.

3. A southern or Dungul type, having close affinities with 2, but in the Campanian the phosphatic beds are inconspicuous, and the

fauna consists of a group of specialized sea-urchins and of gastropods among which *Turritellæ* are very prominent.

The Author emphasizes the uniformity of the Lower Eocene throughout Egypt, its triple subdivision being recognizable over vast areas. In the Middle Eocene this uniformity is replaced by differentiation, the well-known regions of the Fayûm and the Moqattam Hill differing from the succession in the area selected as typical in this paper. In the latter, five zones have been recognized in the lower division, while in the Upper Moqattam the *Turritella*-beds and the strata rich in *Carolia placunoides* and *Plicatula polymorpha* are of zonal importance. The Lower Moqattam is considered as beginning with the *Nummulites-gizehensis* zone and closing with the *Gistortia*-bed, to the significance and extent of which attention is especially directed.

The Author discusses the relation between the Cretaceous and Eocene beds, and points out that they differ lithologically, limestones being dominant in the Lower Eocene and shales in the Upper Cretaceous.

Palæontologically, great groups such as the Ammonites still abundant in the Upper Cretaceous disappear in the Eocene and are replaced by the characteristic nummulinid foraminifera. On the other hand, both periods bear a strong resemblance to each other in the dominance of oysters and sea-urchins over other forms. A notable feature is the comparative rarity of brachiopoda in Egypt throughout both periods, nor have belemnites been recorded from the Egyptian Cretaceous.

Among post-Eocene formations the calcareous grits are shown to have a wide extension; but in the Desert they differ in character from the mammal-yielding beds of the Fayûm. The question as to the Upper Eocene or Oligocene age of these beds is left over.

The quartz-chert gravels appear to be closely related to the calcareous grits, but are unconformable upon them. This continental phase is accompanied by volcanic and geyser activity.

The Cretaceous Period in Egypt was therefore one, in the main, marked by the gain of sea over land, the Eocene was one of rest, while at the close of the Eocene and during the Oligocene the approach of a continental phase is clearly indicated.

## MISCELLANEOUS.

RICHARD BOWDLER SHARPE, LL.D.

DR. RICHARD BOWDLER SHARPE, the eminent ornithologist, died on Christmas Day at his residence in Chiswick. Dr. Sharpe was born in London on November 22nd, 1847, and was educated at Brighton, and at Peterborough and Loughborough Grammar Schools. Even as a boy he was an enthusiastic naturalist, and in his holidays at Cookham made a collection of Birds, which he